UNIFORM HAZARDOUS WASTE MANIFEST AUTOMATION PILOT

PHASE I EVALUATION REPORT

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Background

The purpose of the Hazardous Waste Manifest Automation Pilot project is to test and analyze automated approaches in revising the paper-based RCRA hazardous waste manifest system and its regulations. The general goal is to contribute to EPA's initiatives in reducing paperwork burdens on its programs and to improve government efficiency by adopting automated approaches to the reporting of environmental information.

Over the past few years, the EPA Office of Policy has been overseeing, sponsoring and monitoring several pilot projects in different EPA programs. The Office of Solid Waste formed a workgroup to develop revisions to the hazardous waste manifest process and decided to pilot test a project with the participation of a few State agencies and industrial firms. It was determined that improvements could be made if the manifest were automated at the point of preparing the form and remain in electronic format throughout the cycle of transmission, signature process and storage. Realizing that any automation options had to accommodate both larger and smaller RCRA waste handlers, it was decided that efforts should be focused on two approaches:

1) the development of an electronic data interchange (EDI) approach, i.e. a standards based approach to the manifest form and the protocols for transmitting it to the RCRA waste handlers and States;

2) developing an Internet-based approach that would allow manifest data to be completed by filling out a "smart form" on a web page.

Under both approaches, the State agencies would receive a large portion of their manifests in electronic format, which would easily update their manifest tracking systems, reducing not only the paperwork burdens involved but also the transaction costs of processing manifests.

So far, The Techlaw Team (Techlaw Inc. and DPRA Inc.) has supported EPA's Office of Solid Waste in pilot testing the first option, the EDI based approach to the hazardous waste manifest system. Known as Phase I, this portion of the pilot tests have concentrated on a typical EDI configuration, which means using client-side EDI translation software and communication with trading partners by utilizing a value added network from an EDI vendor. This report is an evaluation of Phase I of this pilot project from its commencement in September 1997 through December 1998.

Project History

The Hazardous Waste Manifest Automation Pilot project consists of two main phases. In Phase I the goal is to establish a traditional EDI transaction based system. Phase II is the incorporation of a digital signature capability and security to the system configured in Phase I.

The objective in Phase I is to design an automated system that allows the pilot participants to exchange the Uniform Hazardous Waste Manifest form using the ANSI X12 Transaction Set 856 (Advanced Shipping Notice/Manifest). The system consists of a dial-up connection to a Value Added Network (VAN) to exchange transmissions that are compliant with the ANSI X12 transmission protocol. End users require EDI translation and communications software to fill out the form and prepare it for transmission among the pilot's trading partners. For Phase II, the goal is to add authentication and non-repudiation to the automated manifest system by incorporating digital signatures and security capabilities in the transmission process. This security solution includes the use of both EDI security software and hardware tokens (using a PC/Fortezza card and card reader) to store and access private keys for the trading partners. The addition of security to the X12 transmissions will need to make them compliant with the ANSI X12.58 security protocol.

The pilot tests for Phase I have just been concluded while efforts for implementing Phase II have just begun. Therefore, this report concentrates solely on the activities dealing with Phase I of the project.

The project began in September 1997 with the selection process for the EDI translation and communications software. Various EDI vendors were contacted to find the most suitable product for the pilot. Some of the products considered were Trusted Link for Windows by Harbinger Corporation, EDI-SIM by Foresight Corporation and Gentran:Smartforms for Windows by Sterling Commerce. Gentran:Smartforms was the selected software. It is a stripped-down, "lite" version of Sterling Commerce's translator software, Gentran:Director. It demonstrates a very easy-to-use and intuitive graphical user interface, the EDI syntax and data files are transparent to end users which make it attractive to the mostly non-EDI experienced pilot participants, and it comes at a much lower cost than regular translator software products. Individual copies of this software package were distributed on loan to all the trading partners participating in the project. Included in the package were the application translator software (Gentran:Smartforms), the communications module software (Commerce:Connection Manager), customized data entry screen and print templates for the Uniform Hazardous Waste Manifest form and trading partner information files. Documentation and pilot training materials also accompanied the distribution package. This included step-by-step installation and user guides, a manifest transmission plan/schedule, a standard operating procedures (SOP) document and numerous other useful documentation.

The Value Added Network for the pilot was Sterling Commerce's Commerce:Network. The VAN served as the transmissions and communications medium for the pilot. A mailbox with 13 mailslots was leased from the VAN, allowing each pilot participant to have an individual mailslot. Electronic manifest transmissions were sent to and received in the mailslots assigned to each of the trading partners. The trading partners used the pilot software Gentran:Smartforms to upload and download manifests from

their mailslots on the VAN to their desktop PCs. Manifests would always be filled out, edited, viewed and prepared for transmission using Gentran:Smartforms (and its communications software, Connection Manager) and the VAN would serve as the transportation and short-term archiving medium.

Phase I utilized a personal identification number (PIN) scheme to represent the signing and authentication of electronic manifests. A seven-character string was used by the individual signer as the PIN representing his/her signature for Blocks 16, 17, 18, 19 and 20 on the electronic version of the Uniform Hazardous Waste Manifest form. When the proper PIN was entered on these blocks, an extended rule written in the application converted the PIN and displayed the company name of the trading partner on that block in order to avoid the display of individual PINs as the manifest traveled from partner to partner. As mentioned previously, Phase II will be the implementation of digital signatures and security enhancements to this configuration.

Concurrent with the implementation efforts of Phase I, an Internet web site was developed to publicize the pilot project. The web site was placed in the "What's New" section of the EPA Office of Solid Waste web page. The URL is:

http://www.epa.gov/epaoswer/hazwaste/gener/manifest/

Problems Encountered and Solutions Found During the Pilot

To fully implement and properly begin the transmission testing period of the pilot took in excess of over ten months. There were two main reasons for this; various development issues and unexpected time delays. One of the most important discoveries made during the implementation period was that traditional EDI was very problematic when applied to a decentralized, chain of custody, communication structure such as the hazardous waste manifest process. Apparently, this type of chain of custody automation problem had never been applied in the EDI world previously. In our pilot, there was a question of "workflow" in which the capability for each trading partner to be able to route a document (manifest) to any of the other trading partners had to exist. As the electronic manifest travels between Generators, Transporters, TSDFs and State agencies, it needs to be directed and re-directed among these entities to complete signatures, provide copies, route manifests and to basically fulfill all RCRA requirements that exist in the paper-based process today. The main technical issue in the pilot was that in a traditional EDI environment, the recipient of a document is always known, and in almost all cases this is a two-way trading relationship, unlike the hazardous waste manifest process.

Although finding workable solutions to the problem stated above have been very intriguing from a technical standpoint, there were also additional causes of delays and complications during the pilot. Most of these are explained in more detail below:

- Overall development took longer than expected since this was the first experience of this kind of an application for Sterling Commerce. Being one of the largest EDI vendors in the industry, they were very interested in assisting to find appropriate solutions. Realizing that in the future, as the electronic commerce industry rapidly grows, they would be faced with unique requirements such as the manifest workflow issue. However, it seemed that allocating necessary resources and priority to the issue was not always at the top of their list.

- A considerable amount of effort was spent on making adjustments on the VAN to solve the routing/workflow issues. The solution was ultimately found by incorporating a "document turnaround" template and using a "document clipping" feature with the ANSI X12 Transaction Set 856 (electronic manifest template) as it was routed across the network. However, the delivery of the Functional Acknowledgment (Transaction Set 997) to the trading partners on the VAN had to be removed in order for this to function properly.

- The Implementation Convention (IC) provided by EPA for the Uniform Hazardous Waste Manifest Form had to be refined numerous (approximately 9 times) times with the Transaction Set 856 in order to be compliant with ANSI X12 standards. Some of the required EDI segments and elements had to be re-structured as a result. Later on in the project, full compliance was not achieved because of the solution found for the workflow issue since some elements had to be hard-coded as a result. However, this did not impact functionality at all and the decision was made to proceed with the proof-of-concept that the overall automation process of the manifest system works well.

- Revisions were made to the template files (screen and print) and partner information files to accommodate various modifications such as the addition of the MPCA (via their Harbinger VAN) and EPA-Research Triangle Park (via their AT&T VAN) as valid entities where trading partners could send electronic manifests. Partner information files were re-modified some months later as it was determined during testing that incorrect EDI ID and EDI Qualifier values were coded for two trading partners, which were causing network side errors on the Sterling VAN.

- Development of the data entry screen templates took longer than anticipated due to changing requirements and needs. Additional modifications were made that were not part of the original specifications and requirements such as the design of a drop down list box on the electronic manifest form which allowed users to specify the "next recipient" of a manifest. This change occurred after the original version of the screen template was developed, as it was because of the routing solution on the VAN side that prompted this modification.

- An unusual rate of Sterling Commerce project contact person changes was very unfortunate for the pilot project as it caused redundancy of work, ineffectiveness, duplication of efforts and delayed overall progress. There were various reasons for this high rate of turnover such as reassignments, relocations, resignations and layoffs. The account managers for Sterling Commerce assigned to our pilot projects (with time frames in parentheses) were the following: Vickie Amirault (July - August '97), Jesse Ernest (August - December '97), Leigh Dunn (January - March '98), Michelle Gray (April '98), Paul LaFalce (April 98 - June 98), Bonnie Frazier (July '98), John Thurow (July - December '98), Pam Morris (December '98 - current).

- The pilot software, along with documentation (user guides, transmission plans and procedures) was distributed to the trading partners on July 23, 1998. During this period The Techlaw Team supported the troubleshooting, hotline and installation support efforts. Although a few trading partners were quickly online and required little assistance, most others had various difficulties such as installation problems, staffing issues and lack of internal computer (hardware such as modems, etc.) resources which impacted the timeliness of the original transmission schedule. It was difficult to form effective groups among partners to complete cycles of manifests. Also, some of the partners found schedule difficult and complex to follow. A revised transmission plan and schedule was sent out to the partners on November 21, 1998. This new plan spelled out many details the original plan had not, including which manifest document number should be used for each transmission, identifying and forming two working groups of trading partners and scheduling the required transmissions on a weekly and pilot scenario (entire load rejections, partial load rejections, normal receipt/acceptance of waste, etc.) basis. This proved to be very effective as the desired results were achieved for Phase I.

Experiences of Individual Pilot Participants

There were a total of 13 trading partners that were involved in Phase I of the pilot project. There were three State agencies (Minnesota Pollution Control Agency, Illinois Bureau of Land and Indiana Department of Environmental Management), eight industry participants along with the project sponsor EPA Office of Solid Waste and contractor firm DPRA Incorporated. The following is a listing of trading partners and their contact persons that participated in the pilot project.

TRADING PARTNER	**CONTACT PERSON(S)**
Minnesota Pollution Control Agency (MPCA)	Jerry Kersten
Illinois Bureau of Land (IBL)	Bill Radlinski, Greg Sullivan
Indiana Department of Environmental Management (IDEM)	Julian Mills, Marcus Johnson
Safety-Kleen Corporation	Catherine McCord, Bob Nass, Rick Peoples
Envirite Corporation	Ellen Riley, Devin Hodge
LTV Steel	Mike Thomas, Alan Cross
U.S. Filter Corporation	George Anderson, Julie Garner
3M Corporation	Tom Ashenmacher
Caterpillar Inc.	Bruce Gilruth
Pollution Control Industries (PCI)	Tita Lagrimas
ENSA	Andrea Fujawa
EPA Office of Solid Waste	Richard LaShier
DPRA Inc.	Tunc M. Kivanc

By the time Phase I testing was completed, all of the trading partners did not participate in the transmissions processes. However, some did participate in all activities including the original transmission schedule and in the revised transmission schedule. There were various reasons for non-participation. They were mostly internally related. Some of the partners had difficulty in allocating (hiring, retaining) staff for the pilot while others had problems acquiring dedicated hardware such as stand-alone PCs, modems, etc. Below is a description and evaluation for the level of participation for each of the trading partners.

Minnesota Pollution Control Agency - MPCA was involved from the beginning of the project. They participated in all of the conference calls, were very vocal and pro-active throughout all of the phases.

MPCA also played a key role in assisting other trading partners by assisting with installation issues, explaining the pilot procedures, objectives and requirements, helping two participants become online in the pilot. MPCA participated in both transmission periods (July and December). They were a key partner for Group 1 of the revised transmission plan. MPCA fulfilled all obligations and were very instrumental in the success of Phase I.

Illinois Bureau of Land - Early on, IBL participated in all project activities and fulfilled their requirements. However, they did not participate in both transmission plans, although they had successfully installed the pilot software and had confirmed to DPRA that they were online by exchanging test transmissions with them. They did call and ask if they could participate after the revised transmission phase had already begun, but unfortunately, it was too late in the project to assign a role for them.

Indiana Department of Environmental Management - IDEM did not have a great presence during the pilot. When the pilot activities started last year, they changed contact persons and missed a few of the pilot conference calls. A few troubleshooting calls came in from IDEM during the first transmission phase and they were able to eventually install the pilot software. However, a modem they had internally requested to use to communicate with the VAN was never delivered to them. Therefore, they did not participate during the transmission testing periods.

Safety-Kleen - Was very active in the pilot except during the original (July) transmission period. However, played a key role in Group 2 during the revised transmission phase and fulfilled all obligations. They were given a second software package to install, however, it was never confirmed that the second package was online, hence, was never active during transmission testing. Overall, made very good contributions for the success of Phase I and was part of Group 2 in the revised transmission phase which completed all of the required manifests.

Envirite - Did an excellent job overall. Probably the best participant among all trading partners. Participated in all activities of the pilot. Was instrumental in assisting others with getting "up-to-speed" with software, instructions and procedures. Member of Group 2 in the revised transmission period, which completed all required manifests.

LTV Steel - Missed a few of the conference calls early on in the project but made up for it by doing a great job during both transmission periods. Was most active along with Envirite during the original transmission period. Was a member of Group 2 in the revised transmission period, which completed all required manifests correctly and on schedule.

U.S. Filter - Missed almost all of the conference calls. Had problems with staffing during the original transmission period and did not participate in that phase. Finally completed installation and became active just before the revised transmission period began. Had some configuration and installation issues which delayed Group 1's transmissions of manifests. Overall, showed good effort to contribute to the pilot and did so by eventually completing all required manifests.

3M Corporation - Had staffing issues at various times during the course of the pilot, especially in the

early stages. Became active just before the revised transmission period. Participated as a member of Group 1 and completed all required manifests. However, did not submit copies of manifests to the pilot State agency (DPRA) on schedule. Got up-to-speed very quickly with the pilot materials, which allowed Group 1 to participate in the revised transmission period.

Caterpillar Inc. - Was very active early on in the project and participated in all conference calls. Received a few troubleshooting calls from them after the original distribution of the software. Had two conference calls with their internal technical staff in pilot configuration requirements. Had problems allocating dedicated resources (PC and modem) at various times. Never became online to participate in both transmission periods.

Pollution Control Industries - PCI was very difficult to figure out. Showed interest to participate in the pilot various times but never did. A few calls were received from them but they did not fulfill their obligations. Missed all conference calls as well, and basically didn't have a contribution in the pilot.

ENSA -Except for attending a couple of conference calls very early on in the project, ENSA did not participate. Cited technical staffing problems and allocating resources to the pilot as the main reasons for not being able to contribute.

Overall Success and Suggestions

As mentioned previously, the biggest obstacle in the project was to solve the workflow issue within the EDI configuration. Since this had never been implemented before, it took much longer than anticipated to find a working solution. Then as the testing period began, things ran smoothly. The troubleshooting and hotline support period responded to trading partner issues and not on technical issues regarding functionality of workflow.

Initially, the trading partners responded poorly to the original transmission plan that was scheduled to begin after the distribution of the software at the end of July 1998. The revision of the transmission plan in November 1998 had a much bigger impact. The revised transmission plan outlined in detail the RCRA roles (generator, transporter and TSDF) each participant would play, instructed which manifest numbers to use for each form and specified when and which scenarios (full load rejection, partial load rejection, etc.) needed to be tested. There were two groups of three trading partners that participated. The testing went on for 3 weeks, with roles being switched every week within the groups. This pilot testing period was very effective and positive feedback was received from the participants. The revised plan was thought to be clearer and more understandable and the electronic manifest form was thought to be very user friendly. Overall, the trading partners made solid contributions to the efforts of demonstrating that the manifest form and the manifest process can be automated.

Now, one of the important questions is: What is the best automated process for the manifest system? It may useful to consider at least one alternative approach to automating the manifest process that is not based on EDI. The most obvious alternative is an Internet based solution that uses the World Wide Web and Internet protocols to complete manifest forms and transmit data. An Internet solution could offer several advantages over EDI. First, it would be less expensive because it would avoid the use of client-side EDI software and eliminate more expensive VAN charges. On a larger scale, it would be easier to implement, make modifications and maintain because it would consist of "thin" clients, or users who require only a web browser and extensions to complete manifests.

Historically, what has kept Internet solutions from being an alternative to EDI have been related to the functionality of HTML based forms and the manner in which the information entered into these forms is stored. Information entered into a HTML based form is stored apart from the form itself making the context and validity of that information questionable. This means that the data (the answers) are divorced from the questions and there is nothing that ties the responses to the form. Also, in order to have non-repudiation, the context of the data has to be stored along with its content.

Now, with the use of an XML (Extensible Markup Language) based approach, it is possible to avoid these issues. An XML based solution can better meet the objectives of the hazardous waste manifest process. Specifically, an XML based solution is an "open" solution, in which a web based form would resemble the manifest form and offer functionality that is better than that of the current EDI based form designed for Phase I of the pilot. Also, users can sign the forms with digital signatures stored on smart cards and all routing functions can be replicated by using a web based workflow software, which would also allow document tracking and archiving. It is recommended that an alternative to the current EDI

approach is a web-based, XML-based solution. This technology is not only just a trend, but it offers advantages in price, functionality and accessibility, especially when implemented for a large-scale environment such as the hazardous waste manifest process.

ATTACHMENT

Log Summary

As stated previously, The Techlaw Team provided outreach, troubleshooting and other technical support to the EDI pilot participants during the transmission testing periods. The table below provides a summary listing of the interactions that took place from July through December 1998:

DATE	TRADING PARTNER	DESCRIPTION
07/23/98	ALL	Phase I software package was sent out to the trading partners. The package included: GENTRAN:Smartforms for Windows Installation Diskettes (4) COMMERCE:Connection for Windows Installation Diskettes (5) Trading Partner and Template Files Diskette (1) Password Card Implementation Plan Transmission Plan Standard Operating Procedures Manifest Form Data Entry Template Guide EDI Template Development Verification Form Installation Instructions Guide GENTRAN:Smartforms - "Getting Started" Manual COMMERCE:Connection - "Getting Started" Guide
07/30/98	IDEM	Assisted Marcus Johnson on mailbox and communication setup. Explained the contents of the package and how to initiate new transmissions.
08/06/98	Envirite	Spoke to Devin Hodge. Answered various installation and mailbox and communications setup questions.
08/07/98	Envirite	Devin Hodge sent EDI transmission successfully to verify that Envirite was online and active for the pilot tests.
08/07/98	IDEM	Assisted Marcus Johnson on how to import partner files and where the EDI Interchange ID and EDI Qualifier ID values need to be entered for each partner file that is imported.
08/09/98	Safety Kleen	Received e-mail from Catherine McCord containing a new company profile write-up that was incorporated in the pilot project's website.
08/13/98	Sterling Commerce	Spoke to Bonnie Frazier about the web-based document tracking tool not functioning fast enough (it was taking too long for some of the manifest transmissions to be posted) and not recognized the EPA mailbox password at times. Problem was fixed..
08/13/98	PCI	Left message for Tita Lagrimas to inquire about their status and if they had any installation questions.
		Spoke to Wayne Neumann to inquire about their status on the pilot. He

DATE	TRADING PARTNER	DESCRIPTION
08/13/98	3M Corp.	pilot. He said that they were in the middle of moving offices and acquiring new hardware. He said they will need a few weeks to get everything worked out and to get 3M online for the pilot.
08/13/98	ENSA	Spoke to Andrea Fujawa to inquire about their status on the pilot. She said that they would need a few weeks to be online as they were looking to hire technical staff that would be involved in the pilot.
08/13/98	IDEM	Spoke to Marcus Johnson to inquire about their status on the pilot. He informed me that they were waiting for a modem that they had requested internally and that it might be a couple of weeks until they would be online.
08/13/98	LTV Steel	Spoke to Mike Thomas to see if they had any configuration questions. LTV confirmed that they were online by sending and receiving EDI transmissions with Envirite.
08/14/98	MPCA	Left message for Joe Henderson to inquire about their status on the pilot.
08/14/98	U.S. Filter	Spoke to George Anderson to inquire about their status on the pilot. He said that he was looking to hire a computer analyst as well and that he would be ready in a few weeks.
08/14/98	Safety Kleen	Left voice mail to Catherine McCord to inquire about their status on the pilot.
08/14/98	IBL	Left voice mail to Bill Radlinski to inquire about their status on the pilot.
08/14/98	Caterpillar	Left voice mail to Bruce Gilruth to inquire about their status on the pilot.
08/24/98	Envirite	Devin Hodge confirmed that Envirite was online.
09/17/98	All	Project Conference Call led by EPA WAM Richard LaShier - main topics were status of where each trading partner is; installation issues; questions. Attendees were; Safety Kleen, MPCA, IDEM, IBL, EPA OSW and DPRA.
09/18/98	Caterpillar	Spoke to Bruce Gilruth and couple of his staff about the hardware/software requirements for the pilot project, in particular, talked about communication/connectivity issues they had about allocating a stand-alone PC (external to their network) for the pilot.
09/18/98	Safety-Kleen	Left voice mail for Rick Peoples to follow-up on issues they mentioned in the conference call on 9/17 regarding difficulties they had experienced during installation and in sending transmissions.
09/18/98	MPCA	Spoke to Jerry Kersten. He was receiving a “security violation” message and was not able to send and receive EDI transmissions successfully.
09/21/98	Safety Kleen	Left voice mail for Bob Nass regarding problems they were encountering that were related to the 9/17 and 9/18 issues.
09/24/98	Safety Kleen	Spoke to Bob Nass, a conference call was setup for 9/28 to resolve their issues.
	Sterling	Spoke to Bonnie Frazier regarding MPCA receiving the “security violation”

DATE	TRADING PARTNER	DESCRIPTION
09/24/98		
09/24/98	Sterling Commerce	Spoke to Bonnie Frazier. MPCA's mailslot password was set incorrectly on the VAN side and this was producing a "security violation" for MPCA
09/24/98	MPCA	Spoke to Jerry Kersten and informed him about the mailslot password being set incorrectly on the Sterling Commerce VAN. He resent an EDI transmission for testing. The "security violation" message appeared again, however, the EDI transmission was successful.
09/25/98	Sterling Commerce	Talked to Brenda Hall. Informed her that some trading partners are receiving "security violation" messages when sending/receiving transmissions. However, all transmissions are sent and received successfully among the trading partners. Brenda said that they will perform some diagnostic tests and continue looking into it.
09/28/98	Safety Kleen	Conference call with Bob Nass and Rick Peoples to assist them with installation and proper mailbox setup questions. They agreed to send DPRA test transmissions when ready.
10/01/98	MPCA	Received two more test transmissions from Jerry Kersten in order to verify that transmissions are not being effected by the "security violation" message that he is receiving.
10/01/98	PCI	Left message for Tita Lagrimas to inquire about their status on the pilot project.
10/01/98	ENSA	Left voice-mail for Andrea Fujawa to inquire about their status on the pilot project.
10/01/98	Caterpillar	Left voice-mail for Bruce Gilruth to inquire about their status on the pilot project.
10/01/98	Safety Kleen	Talked to Bob Nass, he said that they would be ready to send transmissions in a few days..
10/05/98	Safety Kleen	Received test transmissions from Safety Kleen. They are now online. Also talked about sending them another software package that they could install in order to test transmissions from remote locations within their organization.
10/05/98	Caterpillar	Called Bruce Gilruth to inquire about their status on the pilot project. He said that he still needs about a week to work out modem and PC availability issues within his organization.
10/07/98	Sterling Commerce	Conference call with Brenda Hall to discuss and explain the "security violation" message again.
10/07/98	Safety Kleen	Left message for Bob Nass providing him with an additional EDI ID and Qualifier so that they could have a second installation at their organization.
10/07/98	Envirite	Spoke to Devin Hodge to inquire about their status on the pilot project. Asked him to test sending and receiving transmissions with Safety Kleen.

DATE	TRADING PARTNER	DESCRIPTION
10/14/98	MPCA	Received call from Jerry Kersten who had questions about sending EDI transmissions to MPCA via their Harbinger VAN configuration.
10/15/98	MPCA	Received e-mail from Jerry Kersten who had a question about a transmission sent to MPCA via their Harbinger VAN configuration.
10/22/98	MPCA	Sent e-mail to Gary Baran to request confirmation of EDI ID and qualifier on MPCA's Harbinger VAN.
10/22/98	MPCA	Received e-mail from Gary Baran verifying the EDI ID and qualifier for MPCA-H.
10/23/98	MPCA	Sent e-mail to Sterling to request a change to the partner template for testing the Harbinger VAN.
10/26/98	MPCA	Received notification and attachments of partner files via e-mail from Linda Wesser at Sterling of a change to the partner lookup table for all partners.
10/26/98	U.S. Filter	Received notification via e-mail from Jerry Kersten at MPCA that he was traveling to U.S. Filter to install the SmartForms software and get them started, but relayed that there could be potential problems.
10/29/98	U.S. Filter	Sent notification via e-mail of a sample transmission sent from DPRA to U.S. Filter.
11/3/98	MPCA	Sent an e-mail to Linda Wesser/Sterling Commerce requesting that only two of the partner lookup tables be modified --- for DPRA and MPCA-S.
11/3/98	MPCA	Received e-mail from Linda Wesser/Sterling with notification that a change was made in all the partner lookup tables and with attachment of same.
11/16/98	MPCA	Sent another test transmission to MPCA-H and notified Gary Baran.
11/17/98	MPCA	Received e-mail from Gary Baran to report the successful reception of a transmission
11/19/98	U.S. Filter	Sent template (both screen and print) files to Julie Garner via e-mail so that she could import them into Gentran:Smartforms. Apparently, this was not done during the initial installation and was missing from the application.
11/19/98	3M Corp.	Received e-mail from Tom Ashenmacher to report that three test transmissions had been sent to DPRA and MPCA so that he can confirm that 3M was online.
11/19/98	MPCA	Received verification via e-mail from Jerry Kersten that he had received some of the manifests from 3M and one from DPRA in trying to confirm that 3M is online and can trade with MPCA.
11/20/98	U.S. Filter	Exchanged e-mails with Julie Garner about a test transmission sent from US Filter to DPRA.
11/23/98	Sterling Commerce	Received e-mail from Bonnie Frazier at Sterling about not having documentation to send to Sparta regarding scripting language for

DATE	TRADING PARTNER	DESCRIPTION
		Gentran:Smartforms.
11/23/98	All	Sent out new, revised transmission plan and standard operating procedures document to two groups of trading partners. Group 1 consists of MPCA, US Filter and 3M Corp. . Group 2 consists of Envirite, Safety-Kleen and LTV Steel.
11/23/98	MPCA	Exchanged e-mails with Sterling to receive another copy of the partner file for MPCA-S.
12/4/98	3M	Received notification from Tom Ashenmacher via e-mail that 3M had sent the manifests from the first week of the plan to MPCA.
12/4/98	Safety-Kleen	Received notification via e-mail from Bob Nass that Safety-Kleen sent manifests to LTV and LTV did not receive them.
12/4/98	MPCA	Received verification from Jerry Kersten via e-mail that all manifests had been received from 3M and were forwarded to US Filter.
12/4/98	Safety-Kleen	Received notification from Bob Nass via e-mail regarding the length of time it took for the manifests to reach their destination, LTV Steel .
12/4/98	3M Corp.	Received e-mail from Tom Ashenmacher regarding a problem entering a date on the electronic manifest form.
12/7/98	U.S. Filter	Sent e-mail to Julie Garner regarding manifests that were not EDI-compliant transmissions that she received from MPCA.